



An Environmental Restoration Success Story:

A Lessons Learned Review of the Double Tracks Project at the Nevada Test Site



Office of Environment, Safety & Health

Office of Environmental Management

Nevada Test Site

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Benefits Achieved at NTS: ***Estimated Cost Savings = \$14 - 22 million***

The lessons learned review conducted at NTS was facilitated by the DOE Peer Review process. Under this process, an experienced team, composed of DOE, federal and state regulators, and expert consultants, brings lessons learned from around the complex to assist a site in streamlining and improving its assessment and cleanup activities. The peer review team helps the site to work with its regulators to build the support necessary to pursue innovative environmental restoration strategies. A fundamental component of most peer reviews is application of a set of streamlining "principles" identified and developed by DOE and EPA to improve cleanups conducted under RCRA and CERCLA.¹

PROJECT BACKGROUND: The Nevada Test Site (NTS) recently completed a remedial action to remove radioactively-contaminated soils from the Double Track test-shot area located in the northwest corner of Nellis Air Force Range. A 1963 test consisting of weapons-grade plutonium and depleted uranium resulted in widespread soil contamination at low concentrations. Migration to groundwater is not a concern at this arid site. Further, there are no nearby populations and the area is slated to remain under government control for the foreseeable future.

PURPOSE OF THE PEER REVIEW: Because it was the first of several such cleanups the site will be conducting, the NTS project team (i.e., DOE personnel and contractors) conducted a 'lessons learned' review of Double Tracks to identify opportunities to improve upcoming projects. This review focused on: (1) **soil characterization** because of the difficulty in accurately measuring radionuclides in soil; and, (2) **waste management** because preparation and disposal of wastes generated the largest portion of the cost and schedule of soil remediation.

The project team for Double Tracks identified several opportunities to improve upcoming soil remediation projects. Prior to pursuing adoption of these improvements, the site wanted to obtain: (1) external validation that the lessons learned from Double Tracks should be transferred to upcoming projects; and (2) any additional recommendations on opportunities for

improvement. NTS requested a peer review in order to fulfill these objectives.

RESULTS: Following the peer review, the Double Tracks project team presented its recommendations to Nevada Operations for approval and is now incorporating these improvements into its general soil remediation strategy. The site estimates that these modifications will result in cost savings of approximately \$14 to 22 million. This fact sheet summarizes two key improvements identified by the Double Tracks project team and validated through the Peer Review process.

IMPROVEMENTS IN THE SOIL REMEDIATION STRATEGY:

I. Increasing accuracy of characterization: NTS recognized that because of the heterogeneous distribution of contamination in the soil, point sampling and laboratory analysis do not provide an accurate representation of the soil conditions at the site. Therefore, rather than point sampling, the site used various in-situ measurement techniques to obtain data needed to support decision-making. For example, sodium iodide (NaI) and high-purity germanium (HPGe) detectors were mounted on a specially designed vehicle that drove over the site. The site is now employing similar techniques to improve the soil characterization in other projects.

II. Improving cost-effectiveness of waste management: Waste preparation and disposal constituted a major portion of project cost and schedule for Double Tracks. Because of a complex packaging system and detailed

¹ These streamlining principles, including use of a core team, problem definition, early identification of the likely response action, and uncertainty management, are presented in the "Principles of Environmental Restoration" course. This course, provided by DOE's National Environmental Training Office (NETO) in conjunction with EM-43, EH-413, and EPA, can be made available to field ER programs. For more information, please contact NETO's Nick Deloplane at (803) 725-0845.

characterization and certification requirements for each package, waste preparation took approximately five times longer than excavation. NTS recognized that it should evaluate alternatives to current practices before beginning work on upcoming projects. By reviewing Double Tracks, the project team determined that the double-lined supersack packaging system currently used may not be necessary to protectively dispose of this soil.

The Double Tracks project team determined that bulk disposal would limit material handling and thereby reduces worker exposure and PPE requirements, project schedule, and the need for specialized equipment. In addition, this disposal practice allows the site to excavate additional waste and thereby meet more stringent cleanup levels.

At the time of the Double Tracks project review, NVO's waste acceptance criteria did not permit bulk disposal; however, based on the cost and schedule benefits identified by the project team, NTS delayed further soil remediation until NVO waste management staff completed its evaluation and determined that this disposal option could be implemented. Partially as a result of the Double Tracks lessons learned review, NTS is now disposing of excavated soil in bulk.

For more information on the lessons learned review of Double Tracks, please contact Monica Sanchez, DOE Project Manager, at (702) 295-0160.

DOE is planning on conducting additional peer reviews and will be reviewing requests from sites interested in participating in this program. In addition, limited HQ technical assistance is available for other types of streamlining projects. For further information please contact Richard Dailey, EH-413, at (202) 586-7117 or Steve Golian, EM-43, at (301) 903-7791.
